

ABSTRACT

The systems and methods include a feed mechanism supplying multi-strand wire to a coil-spring winder. The coil spring typically has a plurality of turns and is resilient. The multi-strand wire is typically steel, but may be of other suitable material, or a combination of materials. The coil-spring winder receives wire from a spool of wire and forms that wire into a coil spring. Typically, but not always, the coil-spring winder cuts the coil spring to a desired length, and thereby forms a plurality of coil springs of the type that can be employed in mattresses, furniture, car seats, for industrial machines, or for any other application. To feed the coil-spring winder, the systems include a wire holder that supplies the wire to the coil-spring winder along a feed direction. The wire holder is supported for rotation about an axis that may be aligned with the feed direction. The rotation of the wire holder may be substantially synchronous with the formation of the turns of the coil spring. In one embodiment, the spool of wire is mounted onto a wire holder rotatable about a holding axis for reducing torque about a cross section of the wire. Thus, as the spool of wire revolves around the central spool axis, the spool also revolves around a second axis, which typically is orthogonal to the spool axis. In this way, it is understood that the coil-spring winder can pull wire off the spool without it causing twisting that may unravel or snap the multi-strand wire.